

## **REMARKS**

This is a full and timely response to the final Office Action of November 10, 2006 and the Advisory Action of October 3, 2006. Reconsideration and allowance of the application and all presently pending claims are respectfully requested.

Upon entry of this Response, claims 1 and 4-10 are pending in this application. Claims 2-3 and 11-25 are canceled. The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims. Applicants submit that the amendments clarify the invention(s) covered by the claims and that a new search is not required to examine the amended claims.

## **CLAIMS**

### **Claim 1**

Claim 1 is rejected under 35 U.S.C. §103(a) as purportedly being unpatentable by Monkhouse et al. (U.S. Patent 6,547,994) in view of Zhong et al. (U.S. Patent 6,676,987) or Jagmin (U.S. Patent 5,044,955). Amended claim 1 reads as follows:

1. A method of producing a three-dimensional object, comprising the step of:  
*disposing at least one layer of a first material onto a first area in an iterative manner using at least one ink-jet printhead*, wherein the first material is selected from a build material and a contrast enhancing material;  
*disposing at least one layer of a second material and the first material on top of the first area using at least one ink-jet printhead*, wherein the second material is selected from a build material and a contrast enhancing material, *wherein the second material being disposed onto a designated area, wherein the first material being disposed onto a second area, wherein the second area and the designated area are different areas on top of the first area*, wherein the first material and the second material are not the same material;  
forming an identifiable structure from at least one layer of the second material;  
*disposing at least one layer of the first material on top of the second area and the designated area using at least one ink-jet printhead*; and

forming an identifiable structure from the second material within the three-dimensional object, wherein the identifiable structure within the three-dimensional object can be detected using a non-invasive dimensional imaging device.

(Emphasis added). Applicants traverse each of the §103 rejections in the Office Action and submit that the rejection of claim 1 under 35 U.S.C. §103 in view of Monkhouse, Zhong, and Jagmin should be withdrawn because Monkhouse, Zhong, and Jagmin, individually or in combination, do not disclose, teach, or suggest each and every feature of claim 1 above. In this regard, Monkhouse does not disclose, teach, or suggest “disposing at least one layer of a first material onto a first area in an iterative manner using at least one ink-jet printhead...

disposing at least one layer of a second material and the first material on top of the first area using at least one ink-jet printhead ... wherein the second material being disposed onto a designated area, wherein the first material being disposed onto a second area, wherein the second area and the designated area are different areas on top of the first area... disposing at least one layer of the first material on top of the second area and the designated area using at least one ink-jet printhead ” as recited in claim 1. Monkhouse does not teach, disclose, or suggest disposing both the first material and the second material using at least one ink-jet printhead onto the particular areas. In particular, Monkhouse describes using a roller that “sweeps across the surface of the powder feeder bed and deposits it as a thin layer across the receiving platform immediately adjacent to the powder feeder” (Col. 6, lines 36-39). FIG. 1 of Monkhouse shows a powder (12) being spread across the build bed. Monkhouse does *not* use an ink-jet printhead to dispense the powder onto particular areas, but rather sweeps the powder feeder bed. Thus, Monkhouse does not disclose, teach, or suggest, at least the limitations highlighted above in claim 1, and therefore, the rejection of claim 1 should be withdrawn.

Furthermore, in order for a claim to be properly rejected under 35 U.S.C. §103, the teachings of the cited art reference must suggest all features of the claimed invention to one of

ordinary skill in the art. *See, e.g., In re Dow Chemical*, 837 F.2d 469, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 642 F.2d 413, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981). Further, “[t]he PTO has the burden under section 103 to establish a prima facie case of obviousness. It can satisfy this burden only by showing some objective teaching in the cited art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.” *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

In order to establish the *prima facie* case of obviousness, the Examiner must establish a suggestion or motivation either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art to modify the reference or combine reference teachings in order to result in the claimed invention. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

In this regard, Applicants note that there must not only be a suggestion to combine the functional or operational aspects of the combined references, but that the Federal Circuit also requires the prior art to suggest **both** the combination of elements **and** the structure resulting from the combination. *Stiftung v. Renishaw PLC*, 945 Fed.2d 1173 (Fed. Cir. 1991). Therefore, in order to sustain an obviousness rejection based upon a combination of these two prior art references, the prior art must properly suggest the desirability in the references themselves for combining the particular elements.

Zhong and Jagmin are not analogous methods as compared to what is described in Monkhouse. Monkhouse uses free form fabrication, whereas neither Zhong nor Jagmin ever mention free form fabrication and do not describe methods of using freeform fabrication. In addition, Zhong only describes coating an external surface of an already formed object (Abstract), and does not describe a method that includes “forming an identifiable structure from the second material within the three-dimensional object” using freeform fabrication.

Further, Jagmin describes placing an information carrier in a tooth while in the mouth of a person. Jagmin has nothing to do with Monkhouse or Zhong, and is not even remotely related to features described in claim 1 or freeform fabrication. The Office Action has not provided an objective teaching in the cited art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references in particular methods of freeform fabrication. One skilled in the art would not consider the combination of Zhong and Jagmin with Monkhouse because all three references are in entirely different fields, describe very different methods, and use different apparatus (two do not use freeform fabrication) to perform the methods. Therefore, the rejection of claim 1 should be withdrawn for these reasons as well.

#### **Claims 4-10**

Applicants traverse all of the 103 rejections in the Office Action. Applicants respectfully submit that pending dependent claims 4-10 include every feature of independent claim 1 and that the cited references fail to teach, disclose, or suggest at least the features of claim 1. Thus, pending dependent claims 4-10 are also allowable over the prior art of record. In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Notwithstanding the previous reasons for allowance, Applicants submit that Zhong and Jagmin are not analogous methods as compared to what is described in Monkhouse for the reasons described above. As such, the rejections of claims 4-10 should be withdrawn. Therefore, claims 4-10 are allowable over the prior art of record.

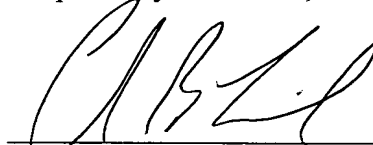
## **Conclusion**

In light of the foregoing amendments and for at least the reasons set forth above, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested.

In addition, any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and official notice, or statements interpreted similarly, should not be considered well known since the Office Action does not include specific factual findings predicated on sound technical and scientific reasoning to support such conclusions.

If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'CBL', is written over a horizontal line.

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